

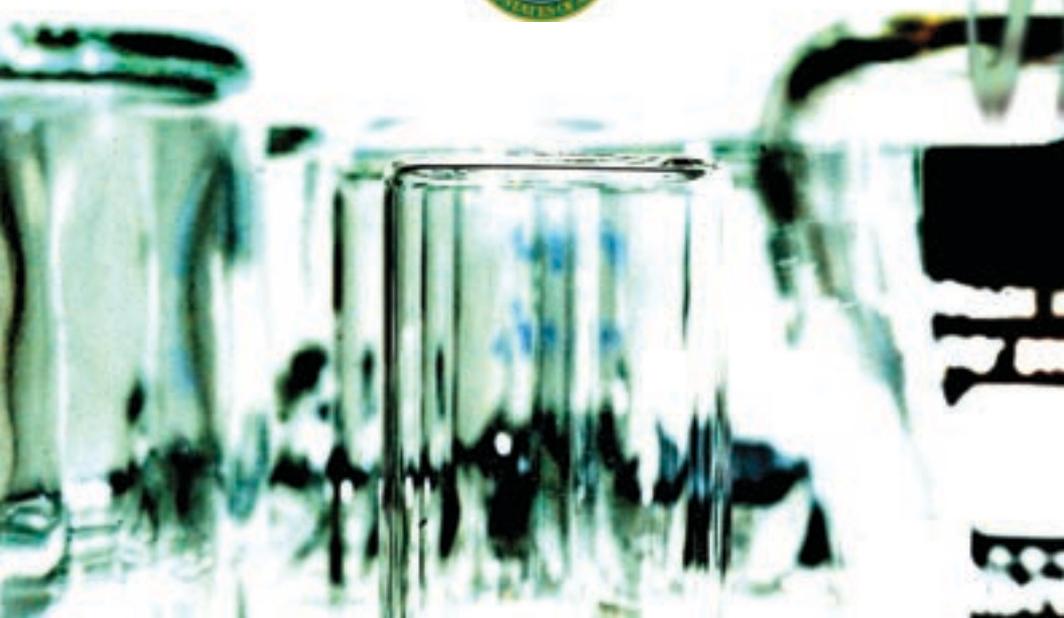
# Science Undergraduate Laboratory Internship (SULI)

Summer 2006

Ames Laboratory  
Iowa State University



**IOWA STATE UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY





## From Student to Scientist ...

From Student to Scientist ...

In 10 short weeks, 10 undergraduate students from colleges and universities across the country experienced life in real-world research settings in laboratories at the Ames Laboratory and Iowa State University. The students were at the Lab and ISU as part of the Department of Energy's Science Undergraduate Laboratory Internship, or SULI, program.

The student internships focused on the research the students performed in laboratories under their mentors' guidance. But along the way, there was also time for other enrichment activities, such as presentations, lab tours and fun.

The 2006 SULI program culminated in an August 4 student research poster presentation, which was enthusiastically attended by scientists, staff and students.

*Steve Karsjen*

Steve Karsjen  
Education Coordinator

## 2006 SULI Student Statistics

### Year in School

Freshman	1	Richard Wang
Sophomores	2	Dan Heidfeld, Charles Pye
Juniors	5	Jeff Baker, Magdalena Furczon, Ryan Glamm, DeAnna Jones, Ben Sikora
Seniors	2	Denae Clampitt, Caleb Klapp

### Male to Female Ratio

Males	7
Females	3

### In-vs. Out-of-State School

#### OUT-OF-STATE SCHOOL

- Jeffrey Baker, Pennsylvania State University, State College, Pa.
- Denae Clampitt, Western Illinois University, Macomb, Ill.
- Magdalena Furczon, Moraine Valley Community College, Palos Hills, Ill.
- Ryan Glamm, The Ohio State University, Columbus, Ohio
- DeAnna Jones, Brigham Young University-Idaho, Rexburg, Idaho
- Caleb Klapp, Westminster College, Fulton, Mo.
- Dan Heidfeld, Michigan Technological University, Houghton, Mich.
- Charles Pye, University of Kansas, Lawrence, Kan.
- Ben Sikora, Colorado School of Mines, Golden, Colo.
- Richard Wang, Carnegie Mellon University, Pittsburgh, Pa.

#### IN-STATE SCHOOL

None

## Student/Mentor Introductions



*Ben Sikora and his mentor, John Verkade, watch the action at the student/mentor picnic hosted by Iowa State University.*



*Richard Wang and his mentor, Masha Sosonkina, get acquainted during the soccer match at the student/mentor picnic.*



*Caleb Klapp meets his mentor, Troy Benjegerdes, at the Ames Laboratory student/mentor luncheon to kick off the SULI program.*

*I was very impressed by the conscientiousness, independence and productivity of the student that worked with me in the SULI program this year.*

**-John Verkade, mentor**

*We are grateful to the DOE for funding the SULI program. Our intern, Ryan Glamm, was an enthusiastic part of our research team this summer. He made a significant contribution to our efforts on the Midwest Forensics Resource Center (MFRC) research project. We encourage continued funding of the SULI program.*

**-Barbara Lograsso, mentor**

# Laboratory Research



Ben Sikora  
SULI student



Denae Clampitt  
SULI student



Magdalena Furczon  
SULI student



Ryan Glamm  
SULI student



Richard Wang  
SULI student



Jeff Baker  
SULI student

## Student Comments

*"I feel this was a great learning experience, and it has opened my eyes to pursuing a graduate degree."*

*"I have a great desire to continue my studies after my B.S. degree. I am also more interested and willing to look at colleges farther away from my current school."*

*"There's a possibility that some of my work might be included in a paper in a real journal, which would be great."*

*"Helped me determine my chances of attending graduate school."*

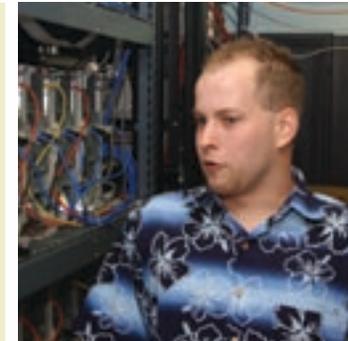
*"My mentor is friendly and cares about my research opinions."*

*"My mentor is a great person and a wonderful scientist."*

*"My mentor revealed a world of research."*

*"An excellent research environment."*

SULI Student Comments



Caleb Klapp  
SULI student



Charlie Pye  
SULI student



DeAnna Jones  
SULI student



Dan Heidfeld  
SULI student

## Laboratory Tours

Part of the SULI experience is seeing the diverse research that goes on at Ames Laboratory and Iowa State University. Many scientists happily set time aside to explain their research to students.

*It was a pleasure to mentor Dan this summer. The SULI summer internship provided an opportunity to work closely with Dan and witness his progress in accomplishing and exceeding the goals I had set for him. This is an excellent summer internship program.*

**-Forrest Nutter, mentor**



**Above:** Vice Provost for Research John Brighton explains the importance of getting a Ph.D. to SULI and REU students.



**Left:** Caleb Klapp tests the strength of a solder joint while mentor Iver Anderson looks on.



**Above:** Ryan Glamm, Deanna Jones and Yaqiao Wu, post-doctoral research associate.



**Left:** Senior metallurgist Karl Gschneidner (right) and senior scientist Vitalij Pecharsky (second from right) explain magnetic refrigeration technology to SULI and REU, or Research Experiences for Undergraduate, students.



**Above:** Edward Yu, Ames Laboratory associate scientist, discusses his research on membrane transporters with students.

**Right:** Senior metallurgist Iver Anderson discusses the benefits of lead-free solder technology with SULI students.



*I really enjoyed having Charlie in the lab because it was different from the typical, more technical and focused interactions with graduate students or peers. His lack of background information was a very pleasant challenge to get him started and interested in the project. But it was very refreshing and rewarding to see that once he got started, his interest was growing daily and he had a clear appreciation of the fact that in research you have the unique advantage of seeing things for the first time that other people are not aware of.*

**-Michael Tringides, mentor**

## Canoe trip on the Des Moines River

All work and no play would make for a dull summer internship. A highlight of the SULI internship is the annual canoe trip down the Des Moines River.



*Above:* Jeff Baker (left) and Ryan Glamm test their maneuvering skills.

*Above Right:* Denae Clampitt (left) and Deanna Jones (affectionately called D2 & D1, respectively by their peers) look at ease on the river.

*Right:* Jeff Baker, Ryan Glamm, Charlie Pye, Denae Clampitt and DeAnna Jones look like the Ames Lab version of "Survivor" contestants.

## Student Networking After Hours

Students found many ways to enjoy Ames and one another's company during their 10-week summer internship.



*Above:* Richard Wang (foreground) and Jeff Baker enjoy the food at the ISU picnic for summer interns.

*Right:* Students gather at one another's apartments for laughs after hours.



*Above:* DeAnna Jones and Ryan Glamm are ready to run the 2006 Midnight Madness 5K and 10K races in Ames.

*Below:* Ben Sikora livens up what could have been an ordinary weekend night with a fire show for his fellow interns.

## After Hours



## Student Poster Presentation



*SULI students pose for a photo at the poster presentation.*



*Andreja Bakac (center) helps SULI student Magdalena Furczon make a point about her poster.*



*Above: Student Ryan Glamm (right) makes a point about his research project to Ames Lab's Todd Zdorkowski (foreground) & Stan Bajic.*

*Below: SULI mentor Barbara Lograsso listens as Ben Sikora explains his research project.*



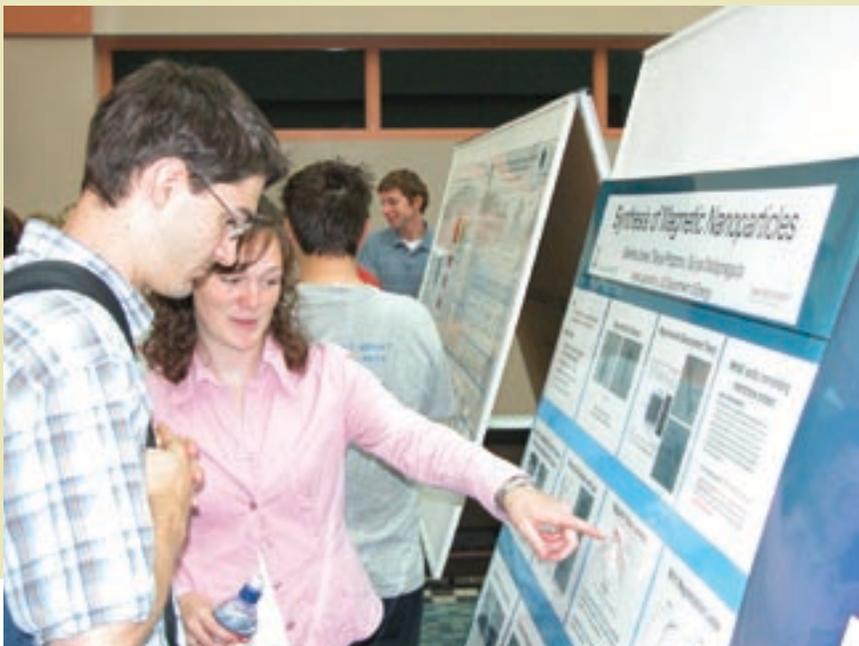
*I really enjoyed working with my SULI intern, and she did a great job.*  
**-Surya K. Mallapragada**

# Student Posters



*Above: Richard Wang (right) ponders a question about his research from Ames Lab associate scientist Michael Schmidt.*

*Below: DeAnna Jones makes a point about her work to another student.*



*Above: Dan Heidfeld (left) reacts to a comment made by his mentor, Forrest Nutter.*

*Below: Ames Laboratory Deputy Director Bruce Harmon (left) captures the attention of Caleb Klapp (center) and Jeff Baker.*



# Ames Laboratory Mentors

**Andreja Bakac**

Senior Chemist, Ames Lab; Adjunct Professor, Chemistry, ISU

**Troy Benjegerdes**

Assistant Scientist, Ames Lab

**Phillip Henna**

Graduate Assistant, Chemistry, ISU

**Jason Jones**

Graduate Assistant, Computer Science, ISU

**Richard Larock**

Professor, Chemistry, ISU

**Barbara Lograsso**

Program Coordinator, Midwest Forensics Resource Center

**Tom Lograsso**

Scientist, Ames Lab; scientist, Materials Science and Engineering, ISU

**Surya Mallapragada**

Program Director, Materials Chemistry and Biomolecular Materials, Ames Lab; Associate Professor, Chemical Engineering, ISU

**Forrest Nutter**

Professor, Plant Pathology, ISU

**Reed Oshel**

Graduate Assistant, Chemistry, ISU

**Tatiana Prozorov**

Post Doctoral Research Associate, Ames Lab

**Masha Sosonkina**

Scientist, Ames Lab

**Michael Tringides**

Professor, Physics and Astronomy, ISU; Physicist, Ames Lab

**John Verkade**

Professor, Chemistry, ISU

**Edward Yu**

Assistant Professor, Physics and Astronomy, ISU; Associate, Ames Lab



For more information on the Iowa SULI program, contact:

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*This was my second year as a SULI mentor. I find the experience rewarding for everybody involved. The students develop an appreciation of science and research in a 10-week period that may literally change their lives and turn them either toward or away from science. There is no better way but a direct involvement in a research project to find out whether they want to dedicate their lives to science and whether they have the drive and ability to do it.*

*The mentors have the moral obligation to teach and guide the young, impressionable minds. This is a serious, but enjoyable obligation. In the end, everybody wins. Both years, a SULI student working in my lab has been able to complete a research project which in the end resulted (last year) or will result (this year) in a publication in a scientific journal. The students are exalted by their successes; the mentors are happy; and, in the process; the DOE has accomplished some of its research and educational goals.*

**-Andreja Bakac**

